

## CLAIMS

What is claimed is:

- 1 1. A method for servicing requests received by a server in a multiple-user environment,  
2 the method comprising the steps of:  
3 establishing a first session between said server and a first user;  
4 establishing a second session between said server and a second user;  
5 responding to requests that are received by said server in said first session by  
6 executing virtual machine code using a first virtual machine instance; and  
7 responding to requests that are received by said server in said second session by  
8 executing virtual machine code using a second virtual machine instance;  
9 wherein said first virtual machine instance and said second virtual machine instance  
10 are distinct instances of a same type of virtual machine;  
11 wherein said first virtual machine instance exists within said server concurrently with  
12 said second virtual machine instance; and  
13 wherein said first virtual machine instance and said second virtual machine instance  
14 are two of a plurality of virtual machine instances, associated with said server,  
15 that share access to data stored in a shared state area allocated in volatile  
16 memory associated with said server.
- 1 2. The method of Claim 1 further comprising the step of sharing, between said first  
2 virtual machine instance and said second virtual machine instance, a set of one or  
3 more resources within said shared state area.
- 1 3. The method of Claim 2 wherein the step of sharing a set of one or more resources  
2 includes sharing data associated with an object class.

1 4. The method of Claim 1 wherein said plurality of virtual machine instances share read-  
2 only access to said data stored in said shared state area allocated in volatile memory  
3 within said server.

1 5. The method of Claim 1 wherein:  
2 said shared state area stores data associated with an object class; and  
3 said first virtual machine instance stores, in session-specific memory associated with  
4 said first virtual machine instance, a first value for a static variable associated  
5 with said object class; and  
6 said second virtual machine instance stores, in session-specific memory associated  
7 with said second virtual machine instance, a second value for said static  
8 variable associated with said object class.

1 6. The method of Claim 1 further comprising the steps of:  
2 responding to a call associated with a particular session with said server by allocating  
3 a call memory for the particular virtual machine instance associated with said  
4 particular session; and  
5 discarding said call memory upon termination of said call.

1 7. The method of Claim 1 further comprising the step of:  
2 responding to a call associated with a particular session with said server by  
3 scheduling, for execution in a system thread, the particular virtual machine  
4 instance associated with said particular session.

1 8. The method of Claim 1 further comprising the steps of:  
2 spawning the first virtual machine instance by instantiating a data structure; and

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~~changing the state of said first virtual machine instance during execution of said virtual machine code by manipulating data within said data structure.~~

1 9. A computer-readable medium carrying instructions for servicing requests received by  
2 a server in a multiple-user environment, the instruction comprising instructions for  
3 performing the steps of:  
4 establishing a first session between said server and a first user;  
5 establishing a second session between said server and a second user;  
6 responding to requests that are received by said server in said first session by  
7 executing virtual machine code using a first virtual machine instance; and  
8 responding to requests that are received by said server in said second session by  
9 executing virtual machine code using a second virtual machine instance;  
10 wherein said first virtual machine instance and said second virtual machine instance  
11 are distinct instances of a same type of virtual machine;  
12 wherein said first virtual machine instance exists within said server concurrently with  
13 said second virtual machine instance; and  
14 wherein said first virtual machine instance and said second virtual machine instance  
15 are two of a plurality of virtual machine instances, associated with said server,  
16 that share access to data stored in a shared state area allocated in volatile  
17 memory associated with said server.

1 10. The computer-readable medium of Claim 9 further comprising instructions for  
2 performing the step of sharing, between said first virtual machine instance and said  
3 second virtual machine instance, a set of one or more resources within said shared  
4 state area.

- 1 11. The computer-readable medium of Claim 10 wherein the step of sharing a set of one  
2 or more resources includes sharing data associated with an object class.
- 1 12. The computer-readable medium of Claim 9 wherein said plurality of virtual machine  
2 instances share read-only access to said data stored in said shared state area allocated  
3 in volatile memory within said server.
- 1 13. The computer-readable medium of Claim 9 wherein:  
2 said shared state area stores data associated with an object class; and  
3 said first virtual machine instance stores, in session-specific memory associated with  
4 said first virtual machine instance, a first value for a static variable associated  
5 with said object class; and  
6 said second virtual machine instance stores, in session-specific memory associated  
7 with said second virtual machine instance, a second value for said static  
8 variable associated with said object class.
- 1 14. The computer-readable medium of Claim 9 further comprising instructions for  
2 performing the steps of:  
3 responding to a call associated with a particular session with said server by allocating  
4 a call memory for the particular virtual machine instance associated with said  
5 particular session; and  
6 discarding said call memory upon termination of said call.
- 1 15. The computer-readable medium of Claim 9 further comprising instructions for  
2 performing the step of:

responding to a call associated with a particular session with said server by scheduling, for execution in a system thread, the particular virtual machine instance associated with said particular session.

16. The computer-readable medium of Claim 9 further comprising instructions for performing the steps of:  
spawning the first virtual machine instance by instantiating a data structure; and  
changing the state of said first virtual machine instance during execution of said virtual machine code by manipulating data within said data structure.

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